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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/680,239	10/05/2000	Bedabrata Pain	06618/526001/CIT3088	1140

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EXAMINER	
AGGARWAL, YOGESH K	
ART UNIT	**PAPER NUMBER**
2615	

DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/680,239	PAIN ET AL.	
	Examiner	Art Unit	
	Yogesh K. Aggarwal	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-15,18 and 19* is/are allowed.

6)☒ Claim(s) *16,17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/21/2005 has been entered.

Response to Arguments

2. Applicant's arguments filed 10/21/2005 have been fully considered but they are not persuasive.

Examiner's response:

3. Applicant argues with regards to claim 16 that Hasegawa fails to teach "internally converting radiation induced charge in each pixel of the linear sensing array into a voltage representing an electrical pixel signal". Antonelli, the secondary reference, has been used to show that a linear sensor array formed of CCDs as taught in Hasegawa may use CCD (charge coupled device) pixels, or may use CMOS (complementary metal oxide semiconductor) APS (active pixel sensing) pixels, photo-diode pixels, or any other linear array of light sensing technology (col. 4 lines 17-24). The CCD as taught in Hasegawa is replaced by CMOS APS pixels of Antonelli which are used for generating a voltage by internally converting radiation induced charge in each pixel of the linear sensing array. Thus the claimed limitation "internally converting radiation induced charge in each pixel of the linear sensing array into a voltage representing an electrical pixel signal" has been taught in the combination of the references. Therefore taking the combined teachings of Hasegawa and Antonelli, it would have been

obvious to one skilled in the art at the time of the invention to have been motivated to have an in-pixel circuit internally converting radiation-induced charge into a voltage representing an electrical pixel signal (a typical feature of APS pixels) into the CCD structure of Hasegawa wherein CCD and APS are obvious variations of each other as taught by Antonelli.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa et al. (US Patent # 5,917,620) in view of Antonelli et al. (US Patent # 6,259,108).

[Claim 16]

Hasegawa et al. teach a method comprising using a linear sensing array of pixels (col. 2 lines 65-67, figure 6, element 1701-1703). In a scanner it is very well known in the art that there is a relative direction of movement between the object and the sensors, coupling a linear integrator array (1710, 1712) of integrators sensing array to sample object generated by multiple frames sensing array (col. 3 lines 12-21) and images of the spatially shifting the mapping from the sensing frames along the predetermined direction to produce a summed signal that sums pixel signals from different pixel locations different frames corresponding common image from a location on object (col. 2 lines 56-64) except that each pixel internally converts radiation-induced charge into a voltage representing an electrical pixel signal. However Antonelli teaches a linear array sensor with a single linear array, or two or more parallel rows of light sensing pixels, may

use CCD (charge coupled device) pixels, or may use CMOS (complementary metal oxide semiconductor) APS (active pixel sensing) pixels, photo-diode pixels, or any other linear array of light sensing technology (col. 4 lines 17-24). Therefore taking the combined teachings of Hasegawa and Antonelli, it would have been obvious to one skilled in the art at the time of the invention to have been motivated to have an in-pixel circuit internally converting radiation-induced charge into a voltage representing an electrical pixel signal (a typical feature of APS pixels) into the CCD structure of Hasegawa wherein CCD and APS are obvious variations of each other as taught by Antonelli.

[Claim 17]

Official Notice is taken of the fact that it is notoriously common to sample twice the reset and signal levels (CDS) of a pixel during a frame in order to reduce noise [As applicant has not traversed the old and well known statement above, the use of correlated double sampling (CDS) is taken as admitted prior art. See MPEP 2144.03(c)]

Allowable Subject Matter

6. Claims 1-15, 18 and 19 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K. Aggarwal whose telephone number is (571) 272-7360. The examiner can normally be reached on M-F 9:00AM-5:30PM.

7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571)-272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YKA
January 2, 2006

DAVID OMETZ
SUPERVISORY PATENT EXAMINER